

REMARKS

In response to the Office Action of December 12, 2003, Applicant respectfully requests reconsideration. To further the prosecution of this application, each of the rejections set forth in the Office Action is addressed below.

The Office Action rejected claims 1-5, 7, 9, and 11-27 under 35 U.S.C. §102(e) and claims 6, 8, and 10 under 35 U.S.C. §103(a). Applicant respectfully traverses each of these rejections.

Claims 14, 20, 21, and 23-27 are amended herein. The application is believed to be in condition for allowance.

Claim Objections

The Office Action objected to claims 23-27 asserting that these claims should depend from 22 instead of claim 16. Applicant has amended each of claims 23-27 to depend either directly or indirectly from claim 22. Accordingly, withdrawal of this objection is respectfully requested.

The Office Action further objected to claims 14, 20, 21, 26, and 27, asserting that the acronym "ELVID" should be spelled out. Applicants have amended each of these claims to spell out the acronym. Accordingly, withdrawal of this objection is respectfully requested.

Rejections Under 35 U.S.C. §102

The Office Action rejected claims 1-5, 7, 9, and 11-27 under 35 U.S.C. §102(e) as purportedly being anticipated by Fisher (6,247,096). Applicant respectfully traverses this rejection.

1. Summary of Embodiments of the Invention

One embodiment of the invention is directed to inventorying data that is stored across a storage domain. For example, as described at page 35, lines 8-21 of Applicant's specification, an entity performing an inventory can maintain information that is used to verify that a logical volume is still in use. For example, the information may include which host computer or

computers to query as to whether the data in the logical volume is still required. Thus, for example, if it is desired to delete the contents of a logical volume to reuse the storage space occupied by the logical volume, the entity may verify that the data in the logical volume is no longer needed by querying the users of the volume (e.g., the host computers). If the data is no longer needed by any user, the data may be deleted. If the data is needed by one or more of the users, the data may not be deleted.

The foregoing summary is provided merely to assist the Examiner in appreciating various aspects of the present invention. The summary may not apply to each of the independent claims, and the language of the independent claims may differ in material respects from the summary provided. The Examiner is requested to give a careful consideration to the language of each of the independent claims and to address each on its own merits, without relying on the summary provided above. Applicants do not rely on the summary to distinguish any of the claims of the present invention over the prior art, but rather, rely only upon the arguments provided below.

2. Discussion of Fisher (6,247,096)

Fisher is directed to handling eject requests of logical volumes in a data storage subsystem. Fisher discloses that in a host system tape management system it may be desirable to “eject” a logical volume by deleting the logical volume to reduce the size of the host system’s databases (Col. 5, lines 30-35). However, when a host system requests ejection of a logical volume, it is necessary to verify that the logical volume is available to be deleted, as the data may still be in use by one or more other host systems (Col. 5, line 66 – Col. 6, line 4). Figure 5 of Fisher illustrates a database table that may be used, *inter alia*, to determine whether a logical volume is available for deletion (Col. 7, lines 12-21, and Figure 8, reference number 99). The table includes a status field for logical volumes, indicating whether the volumes are mounted or not mounted (Col. 6, lines 5-15). Nowhere does Fisher disclose or suggest that this status field (or any other field) includes information that identifies users of the logical volume.

3. Claims 1-15 Patentably Distinguish Over Fisher

Claim 1 is directed to a method of inventorying logical volumes in a computer storage system, the computer storage system comprising a plurality of storage elements coupled together

with a communication network. The method comprises steps of: for each of a plurality of logical volumes, maintaining identifying information for each user of the respective logical volume; and for each of the plurality of logical volumes, verifying that the logical volume is still in use.

The Office Action asserts that Fisher discloses maintaining identifying information for each user of the respective logical volume for each of the plurality of logical volume in the tables depicted in Figures 5 and 6 (*see* Office Action, page 3, paragraph 6). Applicant respectfully disagrees.

Figure 5 is a table with three fields. LV VOLSER and PV VOLSER are identifiers for a logical volume and physical volume, respectively (*see* Fisher, Col. 4, lines 51-59). STATUS indicates whether a logical volume is currently mounted ("M") or not mounted ("N/M") (*see* Fisher, Col. 6, lines 5-15). Nowhere does the Figure 5 table include information identifying users of a logical volume.

Figure 6A is table that indicates what category a logical volume is in (*see* Fisher, Col. 6, lines 18-22). Fisher discloses that logical volumes that share a common relationship or attribute may be placed together in a category (*see* Fisher, Col. 5, lines 16-24). The table of Figure 6A merely indicates in which category a logical volume is placed and does not include any information that identifies users of the logical volume.

The table of Figure 6B indicates the scratch attribute for a category identified in the table of Figure 6A. The scratch attribute indicates whether the volumes in the specified category are scratch volumes or private volumes (*see* Fisher, Col. 6, lines 5-15). A scratch volume is a volume having only expired data and which may be used for rewriting with new data and a private volume is a volume that contains data that is not deletable (*see* Fisher, Col. 5, lines 19-21 and Col. 7, line 1). The scratch attribute for a volume does not include information identifying users of the volume.

As seen from the foregoing, Fisher fails to disclose or suggest maintaining identifying information for each user of a logical volume, as required by claim 1. Therefore, claim 1 patentably distinguishes over Fisher. Accordingly, it is respectfully requested that rejection of claim 1 under 35 U.S.C. §102(e) be withdrawn.

Claims 2-15 depend from claim 1 and are patentable for at least the same reasons. Accordingly, it is respectfully requested that the rejection of claims 2-15 be withdrawn.

4. Claims 16-21 Patentably Distinguish Over Fisher

Claim 16 is directed to a storage element comprising: a storage medium to store logical volumes; an access manager module configured to maintain identifying information for each user of the logical volumes stored on the storage medium; and a verifier module, coupled to the access manager module, to perform verification that a logical volume is still in use.

As should be clear from the discussion above, Fisher fails to disclose or suggest, “an access manager module configured to maintain identifying information for each user of the logical volumes stored on the storage medium,” as recited in claim 16. Accordingly, it is respectfully requested that the rejection of claim 16 under 35 U.S.C. §102(e) be withdrawn.

Claims 17-21 depend from claim 16 and are patentable for at least the same reasons. Accordingly, it is respectfully requested that the rejections of claims 17-21 be withdrawn.

5. Claims 22-27 Patentably Distinguish Over Fisher

Claim 22 is directed to a storage management facility for a computer system that includes a plurality of storage elements and a plurality of host computers, comprising an access manager module configured to maintain identifying information for each user of the logical volumes stored on the storage medium; and a verifier module, coupled to the access manager module, to perform verification that a logical volume is still in use.

As should be clear from the discussion above, Fisher fails to disclose or suggest, “an access manager module configured to maintain identifying information for each user of the logical volumes stored on the storage medium,” as recited in claim 22. Accordingly, it is respectfully requested that the rejection of claim 22 under 35 U.S.C. §102(e) be withdrawn.

Claims 23-27 depend from claim 22 and are patentable for at least the same reasons. Accordingly, it is respectfully requested that the rejections of claims 23-27 be withdrawn.

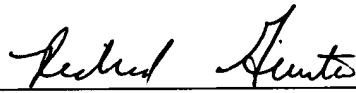
CONCLUSION

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicant's attorney at the telephone number listed below to discuss any outstanding issues relating to the allowability of the application.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Respectfully submitted,

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